WE CLAIM:

1. An endovascular graft comprising:

a graft body section having a proximal end and a distal end;

a connector member affixed to the proximal end of the graft body section, the connector member comprising one or more connector elements; and

a proximal stent comprising one or more proximal stent connector elements coupled to the one or more connector member connector elements.

2. The endovascular graft of claim 1 wherein the connector member is embedded within the graft body section.

3. The endovascular graft of claim 1 further comprising one or more coupling members, wherein:

the one or more connector member connector elements comprise a proximal end and a distal end and opposing shoulder portions at the proximal and distal ends;

the one or more proximal stent connector elements comprise a proximal end and a distal end and opposing shoulder portions at the proximal and distal ends; and

the one or more coupling members couple the one or more connector member connector elements to the one or more proximal stent connector elements.

4. The endovascular graft of claim 3 wherein the coupling member is a wire coil.

5. The endovascular device of claim 1 wherein the connector member comprises a serpentine ring comprising apices.

6. The endovascular device of claim 1 wherein the proximal stent comprises a serpentine ring comprising apices.

7. The endovascular device of claim 1 wherein:

the connector member comprises a serpentine ring comprising apices, wherein the number of connector member apices is n; and

the proximal stent comprises a serpentine ring comprising apices, wherein the number of proximal stent apices is n/2.

8. The endovascular device of claim 1 wherein:

the connector member comprises a serpentine ring comprising apices, wherein the number of connector member apices is n; and

the proximal stent comprises a first region and a second region, the first and second regions each comprising a serpentine ring having apices, and wherein the number of connector member apices is n, the number of proximal stent first region apices is n/2 and the number of proximal stent second region apices is n/4.

9. The endovascular graft of claim 1 further comprising a distal connector member affixed to the distal end of the graft body section and a distal stent affixed to the distal connector member.

10. The endovascular graft of claim 1 wherein the proximal stent further comprises one or more integrally formed barbs.

11. The endovascular graft of claim 9 wherein the distal stent further comprises one or more integrally formed barbs.

12. The endovascular graft of claim 11 wherein the one or more integrally formed barbs are oriented proximally.

13. The endovascular graft of claim 10 wherein the one or more barbs are oriented distally.

14. The endovascular graft of claim 11 wherein the proximal stent further comprises one or more barbs and wherein the one or more proximal stent barbs are oriented distally and wherein the one or more distal stent barbs are oriented proximally.

15. The endovascular graft of claim 14 wherein the one or more proximal stent barbs or the one or more distal stent barbs have a length from about 2 to about 4 mm.

16. The endovascular graft of claim 1 wherein an inflatable cuff is disposed at the proximal end of the graft body section.

17. The endovascular graft of claim 16 wherein an inflatable cuff is disposed at the distal end of the graft body section.

18. The endovascular graft of claim 1 wherein the graft body section comprises an inflatable channel.

19. The endovascular graft of claim 16 wherein the graft body section comprises an inflatable channel.

20. The endovascular graft of claim 16 wherein at least one of the inflatable cuff and the inflatable channel contains an inflation medium.

21. The endovascular graft of claim 20 wherein the inflation medium is a curable biocompatible material having a cure time from about three to about twenty minutes and a post-cure elastic modulus from about 50 to about 400 psi.

22. An endovascular graft comprising:

a graft body section having a proximal end and a distal end;

a proximal stent affixed to the graft body section proximal end, the proximal stent comprising one or more barbs and one or more barb tuck pads configured to retain the one or more barbs when the proximal stent is in a delivery configuration.

23. The endovascular graft of claim 22 wherein the one or more barbs and tuck pads are integrally formed with the proximal stent and wherein the one or more barbs are released by the one or more barb tuck pads when the proximal stent is in a deployed configuration.

24. The endovascular graft of claim 22 wherein the one or more barbs have a length from about 1 to about 5 mm.

25. The endovascular graft of claim 22 wherein the one or more barbs have a length from about 2 to about 4 mm.

26. The endovascular graft of claim 22 wherein the one or more barbs are oriented distally.

27. The endovascular graft of claim 22 wherein the one or more barbs project radially outward from a longitudinal axis of the proximal stent and form a barb radial angle from about 10 to about 45 degrees with respect a proximal neck portion inlet axis, when the proximal stent is deployed in vivo.

28. The endovascular graft of claim 27 wherein the one or more barbs are laterally biased in a plane that is orthogonal to a plane in which the barb radial angle is formed to form a barb kick angle.

29. The endovascular graft of claim 22 wherein the proximal stent further comprises one or more barb tuck slots and wherein the one or more barbs are received by the one or more slots when the proximal stent is in a delivery configuration and the one or more barbs are released from the one or more slots when the proximal stent is in a deployed configuration.

30. The endovascular graft of claim 29 wherein the one or more barbs have a length from about 2 to about 4 mm, are oriented in a distal direction, and project radially outward from a longitudinal axis of the proximal stent and form an angle from about 10 to about 45 degrees with respect to a proximal neck portion inlet axis, when the proximal stent is deployed in vivo.

31. The endovascular graft of claim 22 wherein an inflatable cuff is disposed at the proximal end of the graft body section.

32. The endovascular graft of claim 31 wherein the graft body section comprises an inflatable channel.

33. The endovascular graft of claim 32 wherein an inflatable cuff is disposed at the distal end of the graft body section.

34. The endovascular graft of claim 31 wherein the inflatable cuff contains an inflation medium.

35. The endovascular graft of claim 34 wherein the inflation medium is a curable biocompatible material having a cure time from about three to

about twenty minutes and a post-cure elastic modulus from about 50 to about 400 psi.

36. An inflation medium for use in an inflatable medical device comprising a low-viscosity curable biocompatible material having a cure time from about three to about twenty minutes and a post-cure elastic modulus from about 50 to about 400 psi.

37. The inflation medium of claim 36 wherein the inflation medium is radiopaque.

38. An endovascular graft comprising:

a main body portion,

a first bifurcated portion forming a continuous lumen with the main body portion, said lumen configured to confine a flow of fluid therethrough,

at least one inflatable channel extending from the first bifurcated portion to the main body portion and containing an inflation medium,

at least one inflatable cuff disposed at a proximal end of the main body portion in fluid communication with the at least one channel and containing the inflation medium.

39. The endovascular graft of claim 38 wherein the inflation medium is diluted with saline.

40. The endovascular graft of claim 39 wherein the inflation medium comprises between about twenty and about forty percent by volume saline.

41. The endovascular graft of claim 38 wherein the inflation medium is a curable biocompatible material having a cure time of about three to about twenty minutes and a post-cure elastic modulus from about 50 to about 400 psi.

42. An endovascular graft comprising:

a main body portion with a distal end and a proximal end with an connector member disposed on the proximal end, the connector member comprising one or more connector elements;

a proximal stent comprising one or more proximal stent connector elements, wherein the one or more proximal stent connector elements are coupled to the one or more connector member connector elements; and

a first bifurcated portion and a second bifurcated portion forming a continuous lumen with the main body portion, said lumen configured to confine a flow of fluid therethrough.

43. The graft of claim 42 wherein the proximal stent further comprises one or more integrally formed barbs.

44. The graft of claim 43 wherein the one or more barbs are oriented distally.

45. The graft of claim 43 wherein the one or more barbs have a length from about 1 to about 5 mm.

46. The graft of claim 43 wherein the one or more barbs project radially outward from a longitudinal axis of the proximal stent and form a barb radial angle from about 10 to about 45 degrees with respect to a proximal neck portion inlet axis, when the proximal stent is deployed in vivo.

47. The graft of claim 46 wherein the one or more barbs are laterally biased in a plane that is orthogonal to a plane in which the barb radial angle is formed to form a barb kick angle.

48. The graft of claim 42 further comprising a distal connector member disposed at a distal end of the first bifurcated portion and a distal stent coupled to the distal connector member.

49. The graft of claim 48 wherein a second distal connector member is disposed at the distal end of the second bifurcated portion and a second distal stent is coupled to the second distal connector member.

50. The graft of claim 49 wherein the at least one of the first and second distal stents further comprises one or more integrally formed barbs.

51. The graft of claim 50 wherein the one or more barbs are oriented proximally.

52. The graft of claim 50 wherein the one or more barbs have a length from about 1 to about 5 mm.

53. The graft of claim 50 wherein the one or more barbs project radially outward from a longitudinal axis of the at least one of the first and second distal stents and form a barb radial angle from about 10 to about 45 degrees with respect to a distal stent strut longitudinal axis.

54. The endovascular graft of claim 53 wherein the one or more barbs are laterally biased in a plane that is orthogonal to a plane in which the barb radial angle is formed to form a barb kick angle.

55. A system for use in implanting a tubular medical device within a body lumen having a wall, said system comprising:

a stent for affixing the medical device to the lumen wall; and

a connector member for coupling the stent to the medical device, wherein the stent and connector member are coupled to one another by at least one set of connector elements.

56. The system of claim 55 wherein the stent further comprises one or more barbs.

57. The system of claim 56 wherein the stent further comprises one or more barb tuck pads and wherein the one or more barbs are configured to be retained by the barb tuck pads when the system is in a delivery configuration and released by the one or more barb tuck pads when the system is in a deployed configuration.

58. The system of claim 57 wherein the stent further comprises slots and wherein the barbs are configured to be received by the slots when the system is in a delivery configuration and configured to be released from the slots when the system is in a deployed configuration.

59. The system of claim 57 wherein the one or more barbs have a length from about 1 to about 5 mm.

60. The system of claim 57 wherein the one or more barbs project radially outward from a strut of the stent.

61. The system of claim 60 wherein the one or more barbs are laterally biased in a plane that is orthogonal to a plane in which the barb radially projects.

62. An endovascular graft comprising:

a graft body section having a proximal end and a distal end;

a proximal connector member affixed to the proximal end of the graft body section, the proximal connector member comprising one or more connector elements;

a proximal stent comprising one or more distally oriented barbs and comprising one or more proximal stent connector elements coupled to the one or more proximal connector member connector elements,

a distal connector member affixed to the distal end of the graft body section, the distal connector member comprising one or more connector elements,

a distal stent comprising one or more proximally oriented barbs and comprising one or more distal stent connector elements coupled to the one or more distal connector member connector elements,

an inflatable cuff disposed at each of the proximal and distal ends of the graft body section, and wherein the graft body section comprises an inflatable channel in fluid communication with the proximal and distal cuffs.

63. The endovascular graft of claim 62 further comprising one or more coupling members, wherein:

the one or more proximal connector member connector elements and the one or more distal connector member connector elements each comprises a proximal end and a distal end and wherein opposing shoulder portions are disposed at each of the proximal and distal ends;

the one or more proximal stent connector elements and the one or more distal stent connector elements each comprises a proximal end and a distal end and wherein opposing shoulder portions are disposed at each of the proximal and distal ends;

the one or more coupling members couple the one or more proximal connector member connector elements to the one or more proximal stent connector elements; and

the one or more coupling members couple the one or more distal connector member connector elements to the one or more distal stent connector elements.

64. The endovascular graft of claim 62 wherein the at least one of the inflatable channel, the distal inflatable cuff, and the proximal inflatable cuff contains an inflation medium.

65. The endovascular graft of claim 62 wherein the graft body section comprises ePTFE.

66. The endovascular graft of claim 62 wherein the one or more proximal stent barbs or the one or more distal stent barbs are integrally formed with their respective stents and have a length from about 1 to about 5 mm.

67. An endovascular graft comprising:

a main body portion with a distal end and a proximal end with a connector member disposed on the proximal end, the connector member comprising one or more connector elements;

a proximal stent comprising one or more distally oriented barbs and comprising one or more proximal stent connector elements, wherein the

one or more proximal stent connector elements are coupled to the one or more connector member connector elements;

a first bifurcated portion and a second bifurcated portion forming a continuous lumen with the main body portion, said lumen configured to confine a flow of fluid therethrough;

a distal connector member disposed on distal ends of each of the first and second bifurcated portions, the distal connector members each comprising one or more connector elements,

one or more distal stents comprising one or more proximally oriented barbs and comprising one or more distal stent connector elements, wherein the one or more distal stent connector elements are coupled to the one or more distal connector member connector elements on one or both of the first and second bifurcated portions;

at least one inflatable channel extending from one or both of the first and second bifurcated portions to the main body portion;

at least one inflatable cuff disposed at a proximal end of the main body portion; and

an inflatable cuff disposed at a distal end of one or both of the first and second bifurcated portions, wherein

each of the at least one inflatable channel, at least one proximal inflatable cuff, and distal inflatable cuffs are in fluid communication with each other.

68. The endovascular graft of claim 67 further comprising one or more coupling members, wherein:

the one or more proximal connector member connector elements and the one or more distal connector member connector elements each comprises a proximal end and a distal end and wherein opposing shoulder portions are disposed at each of the proximal and distal ends;

the one or more proximal stent connector elements and the one or more distal stent connector elements each comprises a proximal end and a distal end and wherein opposing shoulder portions are disposed at each of the proximal and distal ends;

the one or more coupling members couple the one or more proximal connector member connector elements to the one or more proximal stent connector elements; and

the one or more coupling members couple the one or more distal connector member connector elements to the one or more distal stent connector elements.

69. The endovascular graft of claim 67 wherein the wherein at least one of the inflatable channel, the first bifurcated portion distal inflatable cuff, the second bifurcated portion distal inflatable cuff and the proximal inflatable cuff contains an inflation medium.

70. The endovascular graft of claim 67 wherein the main body portion and the first and second bifurcated portions comprises ePTFE.

71. The endovascular graft of claim 67 wherein the one or more proximal stent barbs or the one or more distal stent barbs are integrally formed in their respective stents and have a length from about 1 to about 5 mm.